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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,739	05/25/2000	Ibrahim Kamel	9432-000057	8102

7590 09/22/2004

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EXAMINER	
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ART UNIT	PAPER NUMBER
2611	6

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/578,739	Applicant(s) KAMEL ET AL.	
	Examiner Son P Huynh	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 25 May 2000.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) 25-31 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-24 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 25 May 2000 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4, 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-24, drawn to system and method for supporting VCR function, classified in class 725, subclass 102.

   II. Claims 25-31, drawn to system and method for supplying segments of video data stream to Video on Demand client, classified in class 725, subclass 87.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as system for playing back digital video/audio. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Attorney Gregory A. Stobbs (Reg. 28,764) on September 16, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

5. Claims 2-3, 16, 20, 23 are objected to because of the following informalities:

In claim 2, the limitation "...at least a one of said buffers..." in line 3 should be replaced as – at least one of said buffers...-. Appropriate correction is required.

In claim 16, the limitation "...frames between the destination point p and c(k) is in the buffer" in line 18 should be replace as – frames between the destination point p and c(k) are in the buffer-. Appropriate correction is required.

In claim 20, the limitation "equals to the both point values of c(k+1) and does not equal to c(k+2)" in lines 18-19 should be replaced as – equal to the point value of c(k+1) and does not equal to point value c(k+2). Appropriate correction is required.

In claim 23, the limitation "...the conditions (k) is satisfied," line 1, should be replaced as –the condition (k) is satisfied. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 6, 9, 11-12, 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Polish (US 5,963,202).

Regarding claim 1, Polish teaches a system for supporting at least one VCR function in a network-based video-on-demand delivery system, comprising:

a player (125,195,170,175 – figure 1) having a user interface (125,195) that provides at least one user-actuable VCR function initiator (pause, past forward, etc. col. 3, lines 36-50), the player being adapted for coupling to a display monitor (display 135 – figure 1) to supply a video stream to the monitor for playback (col. 2, lines 53-58; col. 3, lines 29-31);

the player maintaining at least one playback pointer (figures 4-7 and col. 5, lines 1-17) that provide information indicate of the current video playback frame;

at least one buffer (video buffer 165 – figure 1) coupled to the player having an associated loader (communications Engine 155-figure 1) for downloading video data from the delivery system (video server system 105 or disk buffer system 195 – figure 1);

a manager (Current status Manager 180 – figure 1) coupled to the player and to the loader for selectively causing the loader to download video data from the delivery system in order to maintain the playback pointer within a predetermined location range within the buffer (figures 4-8 and col. 3, lines 51-67; col. 5, lines 32-42; col. 6, line 65-col. 7, line 32).

Regarding claim 6, Polish teaches the user interface provides VCR functions selected from the group consisting of: jump backward, fast rewind, pause, stop, play, slow motion play, fast forward and jump forward (the user can select an input control signal from options including rewind, fast forward, play, pause and stop – col. 3, lines 36-50).

Regarding claim 9, Polish teaches the manager implements at least two different downloading schemes, including a first scheme for loading the buffer upon startup (loading current second of video information, labeled as "t=0", and five previous second of video information and five future second of the video information – figure 4, col. 5, lines 1-17) and a second scheme for loading the buffers after startup (e.g. after three second of playback relative to the state of video buffer 165, the video buffer controller updates the pointer to reference the current second of video information which is three seconds of information beyond the current second discussed in figure 4. The current status manager request to download three future second of information to replace the oldest three previous second of information – figure 5 and col. 5, lines 18-42).

Regarding claim 11, Polish teaches a video-on-demand system (requested video data is provided from video server system 105- col. 2, line 59-col. 3, line 6) to prefetch segments of video data streams through multiple communication channels of data centered broadcasting network (110 – figure 1) from a video data server (105 –figure 1) for implementing VCR functions including at least playback the segments, the client system (115) comprising:

at least one loader (at communication Engine 155 –figure 1) for download the segments of the video stream from the video data server (communications engine 155 receives video data from video server system 105 - col. 3, lines 23-25);

at least one buffer to store the downloaded segments from the loader (communications engine 155 forwards the received video data to a video buffer 165 for storage – col. 3, lines 23-27);

a player (i.e. Video Driver 170, Input Interface 195, Input device 125, Video Buffer Controller 175 – figure 1) to playback the segments read from the buffer (165), the player being responsive to VCR function commands given through user interface thereof (col. 3, lines 29-50);

a playback pointer (in video buffer controller 175-col. 5, lines 1-25) to issue playback commands to the player for designating a playback starting point of the segment in the buffer (col. 5, lines 1-41);

a prefetch manager (status manager 180 – figure 1) to issue prefetch commands to the loader for prefetching the segments from the server (105) based on the current playback point (e.g. at t=0 – figure 4) of the segment in the buffer so as to keep the playback point designated by the pointer within predetermine range of the buffer (figures 4-8 and col. 3, lines 51-67; col. 5, lines 32-42; col. 6, line 65-col. 7, line 32).

Regarding claim 12, Polish teaches the predetermined range of the buffer is a middle part thereof (figure 4).

Regarding claim 24, the limitations of the method as claimed correspond to the limitations of the system as claimed in claim 11, and are analyzed as discussed with respect to the rejection of claim 11.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 2-3, 7-8, 10, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polish (US 5,963,202) as applied to claim 1 above.

Regarding claim 2, Polish discloses a plurality of "1 Second Video buffer data" each being selectively loaded with video data under control of the manager such that at least one of the buffers contains video data that precedes the current video playback frame (figures 4-7 and col. 5, lines 26-41; col. 6, line 64-col. 7, line 32). However, Polish does not specifically disclose the 1 second buffer data are stored in plurality of buffers. Official Notice is taken that using plurality of buffer is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching of plurality of buffers in order to reduce a back up in case of disruption of the other buffer.

Regarding claim 3, Polish, in combination with a well-known teaching in the art, teaches a system as discussed in the rejection of claim 2. Polish also discloses the video data

stored in each buffer of video buffer 65 is received from Communication Engine 155 (figure 1 and col. 3, lines 23-33). Necessarily, each of the buffers has an associated loader responsible for supplying that buffer with downloaded video data (the device responsible for supplying the assigned buffer with downloaded video data from video server system 105).

Regarding claim 7, Polish discloses a plurality of "1 Second Video buffer data" (figure 4). However, Polish does not specifically disclose at least three buffers. Official Notice is taken that using at least three buffers is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching of at least three buffers in order to buffer data simultaneously therefore reduce delay in playback.

Regarding claim 8, Polish teaches a plurality of "1 Second Video buffer data" (figure 4). However, Polish does not specifically disclose at least three buffers, each buffer having an associated loader. Official Notice is taken that using at least three buffers, each buffer having an associated loader is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching of at least three buffers, each buffer having an associated loader in order to buffer data simultaneously therefore reduce delay in playback.

Regarding claim 10, Polish teaches the system comprising plurality of "1 second buffer data" (figure 4) coupled to the player and wherein the manager implements at least two different downloading schemes, including:

a first downloading scheme in which a first one of the "1 second buffer data" is loaded with a first segment (e.g. 1 second buff data at t=0 – figure 4) and the second and third of the "1 second buffer data" are respectively loaded with second and third segments that each follow the first segments (e.g. buffer of t= 1s and t=2s – figure 4);

a second downloading scheme in which a first one of the "1 second buffer data" is loaded with a first segment (t=0), a second of the buffer is loaded with a second segment that precedes the first segment (e.g. segment at t= -1 second precedes segment at t= 0 – figure 6) and a third of the "1 second buffer data" is loaded with a third segment that follows the first segment (e.g. segment at t= -2 second follows the segment at t = 0- figure 6). However, Polish does not specifically disclose at least three buffers. Official Notice is taken that using at least three buffers is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching of at least three buffers in order to buffer data simultaneously therefore reduce delay in playback.

Regarding claim 13, Polish teaches a system as discussed in the rejection of claim 11. Polish further discloses plurality of "1 second buffer data" (figure 4). However, Polish does not specifically disclose at least three loaders and three buffers. Official Notice is taken that using at least three loaders and three buffers is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish with a well-known teaching in the art of using at least three loaders and at least three buffers in order to receive data quicker.

10. Claims 4-5, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polish (US 5,963,202) as applied to claim 1 above, and in view of Eyer et al. (US 6,588,015).

Regarding claim 4, Polish teaches a system as discussed in the rejection of claim 1. However, Polish does not specifically disclose a feasible point calculation module that assess whether the destination point resulting from a selected user interaction with the VCR function initiator will result in discontinuous playback.

Eyer discloses a digital ration broadcast system (col. 1, lines 58-56). The system should be compatible with audio data as well as video and multimedia data (col. 1, lines 49-50). Eyer further discloses if a third SKIP FORWARD command were issued before the track G packet 414 was available, for example, at point 486, then track G could not be played, and an alert signal such as a beep is preferably provided to inform the listener to wait to access new track (col. 13, lines 8-15). Necessarily, a feasible point calculation module that assesses whether the destination point (e.g. point 486 or track G) resulting from a selected user interaction with the VCR function initiator (SKIP FORWARD) will result in discontinuous playback (listener waits to access new tracks). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to modify Polish to use the teaching as taught by Eyer in order to allow user to quickly skip to a desire point and to indicate of unavailable data.

Regarding claim 5, Polish in view of Eyer teaches a system as discussed in the rejection of claim 4. Eyer further teaches responsive to the feasible point calculation module to modify a requested VCR function such that the function will not result in discontinuous playback (the user may decide to return to one of the earlier tracks, using the SKIP BACKWARD function or if SKIP FORWARD command were issued before the track G packet 414 was available, the play back can be moved as far forward as possible (as near to end), which is the point at which data is currently arriving (col. 13, lines 13-21).

Regarding claim 14, Polish teaches a system as discussed in the rejection of claim 11. Polish further teaches the VCR function given through the user interface of the player including normal play (play button 186) which playbacks the segment of the video streams at normal speed, fast forward (184) which playbacks the segment at multiple times speed as normal play in forward direction, fast backward (rewind 182) which playbacks the segments at multiple times speed as the normal play in backward direction, pause (188) which playbacks stationary with keeping the current playback point (figure 1 and col. 3, lines 34-67). However, Polish does not specifically disclose slow forward, jump forward, jump backward options.

Eyer teaches jump forward (SKIP FORWARD button 254 – figure 2) which jumps directory to the destination point of the segment specified in terms of forward distance relative to the current playback point and resumes the normal play from the jumped point (col. 8, lines 5-12), and jump backward (SKIP BACKWARD button 252 – figure 2) which jumps directory to the destination point of the segment specified in terms of backward distance relative to the current playback point and resumes the normal play from the jumped point (col. 7, lines 61-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching as taught by Eyer in order to quickly locate a point to start playing. However, neither Polish nor Eyer specifically discloses slow forward option which playbacks the segment slower than the normal play in forward direction. Official Notice is taken that using slow forward option is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish and Eyer to use the well-known teaching in the art of slow forward option in order to allow user to play a program in an alternative rate.

Regarding claim 15, Polish teaches a system as discussed in the rejection of claim 11. However, Polish further discloses broadcasting segments through the channels of the network (110) from the server (105) to the client (115) – figure 1. However, Polish does not specifically disclose according to size of the broadcast segment, the playback pointer designates the feasible playback starting point for a destination frame point of the segment designated by VCR function commands.

Eyer teaches according to size of the broadcast segment, the playback pointer designates the feasible playback starting point for a destination frame point of the segment designated by VCR function commands (if the user select to skip to a particular point, if the information at the selected point is not available, the data could not be played or, alternatively, the play back can be moved as far forward as possible (as near to the end) which is the point at which data is currently arriving (col. 13, lines 5-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Polish to use the teaching as taught by Eyer in order to quickly locate the playback point.

Allowable Subject Matter

11. Claims 16-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 16, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;

- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (b): the size of the current broadcasting segment k equal to the size of next segment k+1, wherein

when the conditions (a) and (b) are satisfied, if frames between the destination point p and c(k) is in the buffer, then the point p is the feasible point, otherwise the later nearest point q that frames between points of q and c(k) are in the buffers the feasible point having smallest point value.

Regarding claim 17, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;
- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);

- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (c): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next two segments k+1 and k+2; and
- condition (d): the point value of c(k) equals to the point value of c(k+1),

wherein

when the conditions (a), (c) and (d) are satisfied,

if both frames between the destination point p and c(k) and frames between the point b(k+1) and c(k+1) are in the buffer, then the point p is the feasible point,

otherwise:

if frames between the points of b(k+1) and c(k+1) are in the buffer, then the later nearest point q that frames between points of q and c(k) is in the buffers is the feasible point having smallest point value,

if frames between the points of b(k+1) and c(k+1) are not in the buffer, then the later nearest point q that frames between the points q and c(k+1) is in the buffer is the feasible point having smallest point value.

Regarding claim 18, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;

- c(k) is defined as a current broadcasting frame point of segment No. k;
- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (c): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next two segments k+1 and k+2; and
- condition (e): the point value of c(k) does not equals to the point value of c(k+1),

wherein

when the conditions (a), (c) and (e) are satisfied,

if both frames between the destination point p and c(k) are in the buffer, then the point p is the feasible point, otherwise:

the later nearest point q that frames between points of q and c(k) are in the buffers is the feasible point having smallest point value.

Regarding claim 19, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;

- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (f): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next segment k+1 is half of size of its next segment k+2; and
- condition (g): the point value of c(k) equals to the both point value of c(k+1) and c(k+2),

wherein

when the conditions (a), (f) and (g) are satisfied,

if frames between the destination point p and c(k), frames between the point b(k+1) and c(k+1), and frames between the point b(k+2) and c(k+2) are in the buffer, then the point p is the feasible point, otherwise:

if frames between the point b(k+1) and c(k+1), and frames between the point b(k+2) and c(k+2) are in the buffer, then the later nearest point q that frames between points of q and c(k) is in the buffers is the feasible point having smallest point value,

if frames between the points of b(k+1) and c(k+1) are not all in the buffer, and frames between the point b(k+2) and c(k+2) are in the buffer, then the later nearest

point q that frames between the points q and c(k+1) is in the buffer are the feasible point having smallest point value;

if frames between the points of b(k+1) and c(k+1) are not in the buffer, then the later nearest point q that frames between the points q and c(k+2) are in the buffer is the feasible point having smallest point value.

Regarding claim 20, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;
- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (f): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next segment k+1 is half of size of its next segment k+2; and
- condition (h): the point value of c(k) equals to the point value of c(k+1) and does not equal to c(k+2),

wherein

when the conditions (a), (f) and (h) are satisfied,

if frames between the destination point p and c(k), and frames between the point b(k+1) and c(k+1) are in the buffer, then the point p is the feasible point, otherwise:

if frames between the point b(k+1) and c(k+1) are in the buffer, then the later nearest point q that frames between points of q and c(k) is in the buffers is the feasible point having smallest point value,

if frames between the points of b(k+1) and c(k+1) are not all in the buffer, then the later nearest point q that frames between the points q and c(k+1) is in the buffer are the feasible point having smallest point value.

Regarding claim 21, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;
- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and

- condition (f): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next segment k+1 is half of size of its next segment k+2; and
- condition (i): the point value of c(k) equals to the point value of c(k+2) and does not equal to c(k+1),

wherein

when the conditions (a), (f) and (i) are satisfied,

if frames between the destination point p and c(k), and frames between the point b(k+2) and c(k+2) are in the buffer, then the point p is the feasible point, otherwise:

if frames between the point b(k+2) and c(k+2) are in the buffer, then the later nearest point q that frames between points of q and c(k) is in the buffers is the feasible point having smallest point value,

if frames between the point b(k+2) and c(k+2) are not in the buffer, then the later nearest point q that frames between the points q and c(k+2) is in the buffer are the feasible point having smallest point value.

Regarding claim 22, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;
- c(k) is defined as a current broadcasting frame point of segment No. k;

- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (a): the destination point p is located at or before broadcasting c(k) of the segment k broadcasting in channel k; and
- condition (f): the size of the current broadcasting segment k is half of size of the next segment k+1 and the size of the next segment k+1 is half of size of its next segment k+2; and
- condition (i): the point value of c(k) does not equals to the both point value of c(k+1) and c(k+2),

wherein

when the conditions (a), (f) and (j) are satisfied,

if frames between the destination point p and c(k) are in the buffer, then the point p is the feasible point,

otherwise the later nearest point q that frames between points of q and c(k) is in the buffers is the feasible point having smallest point value.

Regarding claim 23, the prior art of record fails to disclose or fairly suggests the client system where:

- k is defined as natural number;
- b(k) is defined as a beginning frame point of segment No. k;
- e(k) is defined as an end frame point of segment No. k;

- c(k) is defined as a current broadcasting frame point of segment No. k;
- K is defined as numbers of channels and divided into segments of a set of video data streams of each video of length;
- point value of b(k) equals to 0 as an offset value, (1<=k<=K);
- condition (k): the destination point p is located after the current broadcasting point c(k) of the segment k broadcasting in channel k,

wherein

when the condition (k) is satisfied, frames between the destination point p and c(k) are considered as frames between p and e(k-1) and frames between b(k) and c(k) so that the destination point p is considered to be located at or before broadcasting point c(k) of the segment k broadcasting in channel k.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cohen (US 4,949,187) teaches video communications system having a remotely controlled central source of video and audio data.

Tokoro et al. (US 6,130,869) teaches multiple channel information reproducing apparatus including buffer memories assigned to channel respectively.

Inoue et al. (US 5,990,881) teaches near video on demand signal receiver.

Russo (US 6,025,868) teaches stored program pay per play.

Brodsky et al. (US 5,774,186) interruption tolerant video program viewing.

Ellis et al. (US 2003/0149988) teaches client server based interactive television program guide system with remote server recording.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P Huynh whose telephone number is 703-305-1889. The examiner can normally be reached on 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C Grant can be reached on 703-305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Son P. Huynh
September 16, 2004

VIVEK SRIVASTAVA
PRIMARY EXAMINER